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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,782	02/28/2002	Kaoru Isobe	46/165	7189

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EXAMINER

KOPEC, MARK T

ART UNIT	PAPER NUMBER
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1751

DATE MAILED: 02/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/069,782

Applicant(s)

ISOBE ET AL.

Examiner

Mark Kopec

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

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This application is a 371 of PCT/JP00/05993 (filed 9/4/00). The preliminary amendment filed 2/28/02 is entered. Claims 1-11 are pending.

The references cited in the Search Report (210) have been considered, but will not be listed on any patent resulting from this application because they were not provided on a separate list in compliance with 37 CFR 1.98(a)(1). In order to have the references printed on such resulting patent, a separate listing, preferably on a PTO-1449 or PTO/SB/08A and 08B form, must be filed within the set period for reply to this Office action.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in

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order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, 5, 6, 8, 9 and 11 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 1-261,469.

Note that a full English language translation of this reference has been ordered and will be provided to applicant as soon as possible.

As stated in the International Preliminary Examination Report, JP '469 (Document 1) discloses:

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Document 1 discloses use of an organic solvent medium as a dispersion medium, tin oxide powder in which the surface of the particles is coated with an organic coupling agent, and dispersions of electrically conductive powder in an organic solvent containing a dispersant (claims; page 1 lower right column; page 5 lower right column to page 6, upper left column; and page 6, upper right column to lower left column).

The same document also indicates that the tin oxide powder can contain antimony (page 2, upper right column), that an organic coupling agent such as a silane coupling agent can be selected (page 2, lower left column to page 4, lower right column), that the quantity of organic coupling coated is preferably 0.01-5.00 wt% of the tin oxide (page 2, lower right column), and mixing the organic solvent-based dispersion with a resin to constitute an electrically conductive coating material (page 5, lower right column to page 6, upper left column).

The reference either specifically or inherently meets each of the claimed limitations.

In the alternative that any minor modifications are necessary to meet the claimed limitations, such as minor variation in percentages, such modifications are well within the purview of the skilled artisan.

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Claims 3, 4, 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 1-261,469.

JP 1-261,469 is relied upon as set forth above.

The reference differs from the instant claims (under 35 USC 102) in failing to specifically disclose the percentages, specific surface area, or surfactant class (cationic) recited in the above listed claims.

It is the examiner's position that the skilled artisan would have to utilize only routine experimentation in order to arrive at such percentages/materials. The recited limitations are well known in the art and do not patentably distinguish over the prior art or record. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suezaki et al (5,834,549).

Suezaki discloses transparent conductive coating composition comprises a conductive powder (a) and a binder resin (b) containing (meth)acrylate compound as a main component. The composition may further comprise a dispersant (c), a photopolymerization initiator (d) or a titanium coupling agent

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(e). A transparent antistatic molded article is made of a substrate having a transparent conductive film comprising the transparent conductive coating composition described above (Above). In the above embodiment of the present invention, the conductive powder (a) consists essentially of a barium sulfate particle coated with antimony oxide-containing tin oxide (Col 2, lines 33-35). The amount of the antimony oxide-containing tin oxide in the particle is preferably 30 wt % (Col 2, lines 56). In the transparent conductive coating composition of the present invention, if the amount of the binder resin (b) in the above conductive composition is too small, the cross-linking density is lowered, which results in deterioration of marring resistance and solvent resistance of the resulting coating film. On the other hand, if the amount is too large, the volume rate of the conductive powder (a) is comparatively small, which results in deterioration of conductivity of the resulting coating film. Therefore, the amount of the binder resin (b) is limited within a range of 5 to 70 parts by weight, based on 100 parts by weight of the conductive powder (a). Examples of the dispersant (c) include anionic surfactant such as dialkylsulfosodiumsuccinate or alkyl naphthalenesodiumsulfonate, cationic surfactant such as stearyltrimethylammoniumchloride, ester surfactant such as solvitanmonostearate polyvinylacetal resin, etc. (Col 3, lines

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44-60). The titanium coupling agent (e) used in the present invention may be a titanate compound which has properties of dispersing the conductive powder (a) in the (meth)acrylate compound or the organic solvent described below.

Examples of the titanate compound include

isopropyltriisostearoyltitanate,
tetraisopropylbis(dioctylphosphite)titanate,
tetraoctylbis(ditridecylphosphite)titanate, tetra(2,2'-
diaryloxymethyl-1-butyl)bis(ditridecyl)phosphitetitanate,
isopropyltridecylbenzenesulfonyltitanate,
bis(dioctylpyrophosphate)oxyacetatetitanate,
bis(dioctylpyrophosphate)ethylenetitanate,
isopropyltrioctanoyltitanate,
isopropyl dimethacrylisostearoyltitanate,
isopropylisostearoyldiacryltitanate,
isopropyltri(dioctylphosphate)titanate,
isopropyltricumylphenyltitanate, isopropyltri(N-aminoethyl -
aminoethyl)titanate and the like.

The titanium coupling agent (e) of the present invention is used in the condition of attaching on the surface of the conductive powder (a). One of the attaching method is the method of

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agitating the mixture of the organic solvent and the conductive powder (a), then dropping (math)acrylate compound into said mixture. Another method is the method of spraying the coupling agent on the surface of the conductive powder (a). Still another method is the method of dissolving the titanium coupling agent (e) in the solvent, and mixing them with the conductive powder (a), then drying to eliminate said solvent. In the coating composition, if the amount of the titanium coupling agent (e) is too small, dispersion of the conductive powder (a) is insufficient. On the other hand, if the amount is too large, the surface-hardness and marring resistance of the resulting coating film become inferior. Therefore, the amount of the titanium coupling agent (e) is preferably within a range of 0.1 to 10 parts by weight based on 100 parts by weight of the conductive powder (a) (Col 6, line 67 to Col 7, line6).

Although Suezaki et al generally teaches the inclusion of the claimed ingredients in their conductive composition, the reference does not require these components with sufficient specificity to constitute anticipation.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to have formulated an organic solvent based composition, as taught by Suezaki et al, which contained tin oxide powders, coupling agent and dispersant

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in the claimed amounts disclosed and taught by Suezaki et al. Therefore, one of ordinary skill in the art would have had a reasonable expectation of success, because such a conductive composition containing tin oxide powders, coupling agent and dispersant is expressly suggested by the Suezaki et al disclosure and therefore is an obvious formulation.

In view of the foregoing, the above claims have failed to patentably distinguish over the applied art.

Applicant is reminded that any evidence to be presented in accordance with 37 C.F.R. 1.131 or 1.132 should be submitted before final rejection in order to be considered timely.

The remaining references listed on forms 892 and 1449 have been reviewed by the examiner and are considered to be cumulative to or less material than the prior art references relied upon in the rejection above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Kopec whose telephone number is (571) 272-1319. The examiner can normally be reached on Monday - Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Yogendra Gupta can be reached on (571) 272-1316. The fax phone number for the

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organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Mark Kopec
Primary Examiner
Art Unit 1751

MK

February 10, 2004